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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,467	09/01/2006	Takeshi Kimura	040302-0592	1871
23428 7590 03/17/2009 FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007				
EXAMINER				
ALGAHAIM, HIFAL A				
ART UNIT		PAPER NUMBER		
3663				
MAIL DATE		DELIVERY MODE		
03/17/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/591,467

Applicant(s)

KIMURA ET AL.

Examiner

HELAL A. ALGAHAIM

Art Unit

3663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-37 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SG/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

- I. Claims 1-16, 19-20 and 22-27 drawn to an apparatus (A system for assisting a driver operating a vehicle by determining a risk that the vehicle may come into contact with the target obstacle).
 - II. Claims 17-20 drawn to a process (A method for assisting a driver operating a vehicle traveling on a road).
 - III. Claims 28-37 drawn to an apparatus (A system for assisting a driver operating a vehicle by regulating a reaction force from the accelerator pedal and brake pedal in accordance with a repulsive force F_c).
2. **Applicant amendment necessitates the new lack of unity.** The inventions listed as groups **I, II and III** do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The groups listed above are not within the permitted combination of different categories of inventions. That is one apparatus and one process. As set forth in the

form PCT/ISA/210, there is no special technical feature that defines a contribution over the prior arts (see EP 1300275, EP 0991045, US 6021375 and EP 1057159).

Upon electing Group I, Applicant is required to elect one species from each group below:

Group A:

Species 1: correction device is configured to correct corrects the control amount on the basis of the measured width upon determining that the vehicle is overtaking the target obstacle.

Species 2: correction device is configured to correct corrects the control amount on the basis of the measured width and an overlap between the target obstacle and the path.

Group B:

Species 1: the control arrangement is configured to regulate a reaction force from a driver controlled input device for longitudinal control of the vehicle.

Species 2: the control arrangement is configured to regulate a reaction force from a driver controlled input device for lateral control of the vehicle.

Group C:

Species 1: the control amount is variable with a gain, and wherein the correction device is configured to gradually increase the gain from a predetermined value as the overlap increases.

Species 2: the control amount is variable with a gain, and wherein the correction device is configured to gradually increase the gain zero as the overlap increases

after exceeding a predetermine value.

Species 3: the correction device is configured to gradually increase the gain from a predetermined value as the overlap varies in increasing direction after exceeding a predetermined value, but gradually decreases the gain to zero as the overlap varies in decreasing direction.

Group D:

Species 1: the device arrangement includes a width measurement device configured to measure a width of the target obstacle, and the control arrangement includes a correction device configured to correct the control amount on the basis of the measured width of the target obstacle.

Species 2: the device arrangement is configured to determine a lateral deviation (zXd) of the vehicle from a centerline of a lane on the road, and a width (W) of the target obstacle, and the control arrangement calculates an overlap ratio (La) that is expressed as: $La = 1 - Ad/W$.

Group E:

Species 1: The he control arrangement is configured to determine an overlap ratio gain against the overlap ratio.

Species 2: the control arrangement is configured to determine a correction coefficient against the overlap ratio.

Upon electing Group III, Applicant is required to elect one species from each group below:

Group A:

Species 1: the main controller is configured to execute determination of the repulsive force.

Species 2: the main controller is configured to calculate an accelerator pedal reaction force value.

Species 3: the main controller is configured to calculate a brake pedal reaction force value.

Species 4: the main controller is configured to determine a steering reaction force.

Species 5: the main controller is configured to determine an overlap ratio gain.

Group B:

Species 1: with a same width of the target obstacle, the greater the overlap ratio, the greater a degree to which the target obstacle overlaps the traveling path of the vehicle.

Species 2: with a same lateral deviation of the centerline of the target obstacle from the centerline of the traveling path of the vehicle, the greater the overlap ratio, the greater the width of the target obstacle.

6. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HELAL A. ALGAHAIM whose telephone number is (571)270-5227. The examiner can normally be reached on Monday - Friday from 7:30 AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack W. Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. A. A./
Examiner, Art Unit 3663

/Jack W. Keith/
Supervisory Patent Examiner, Art Unit 3663